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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/681,504
Filing Date: October 07, 2003
Appellant(s): VYVODA ET AL.

MAILED
DEC 2 2005
GROUP 2800

Thomas L. Dickey
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 10/24/2005 appealing from the Office action mailed 2/10/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because its Summary of Claimed Subject Matter explains the subject matter defined in independent claim 68 in general terms only, without reference to the specification and drawings.

The examiner would like to point out one particular feature of the claimed invention. Because the claims are open ended ("memory array comprising," claim 68 line 1) they allow for an unlimited number of first pillars and an unlimited number of second pillars. Each pillar stores only one bit of information, so a practical embodiment of the claimed invention could have hundreds of thousands, even millions, of first and second pillars. To meet the claim, however, only a single first pillar and a single second pillar need be "substantially free of stringers."

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The statement may be found, first, under the heading "Issues," and second, under the heading "Grouping of Claims."

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,034,882	**JOHNSON et al**	**3-2000**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 68-70 are rejected under 35 U.S.C. 102(b) as being anticipated by JOHNSON et al. (6,034,882).

With regard to claims 68 and 69, Johnson et al. discloses a monolithic 3-dimensional memory array comprising a first set of strips including a first terminal 25, a second set of strips including a second terminal 26, a third set of strips including a third terminal 29, a first pillar 27 having at least one side wall with a slightly positive slope, said pillar 27 disposed between and connecting said first 25 and second 26 sets of strips, and a second pillar 30 having at least one side wall with a slightly positive slope, said pillar 30 disposed between and connecting said second 26 and third 29 sets of strips, wherein each of the pillars is substantially free of stringers, and wherein the first and second pillars include first and second P doped silicon regions 40, first and second N doped silicon regions 43, and first and second insulating regions 42 disposed between the respective P (40) and N (43) doped silicon regions. Note figures 5 and 6(a), column 11 lines 3-21, and column 12 lines 1-12 of Johnson et al. Note, column 12 lines 1-12, that figure 6(a) represents a close up view of each of pillars 1 through 6 shown in figure 5.

With regard to claims 68 and 70, Johnson et al. discloses a monolithic 3-dimensional memory array comprising a first set of strips including a first terminal 25, a second set of strips including a second terminal 26, a third set of strips including a third terminal 29, a first pillar 27 having at least one side wall with a slightly positive slope, said pillar 27 disposed between and connecting said first 25 and second 26 sets of strips, and a second pillar 30 having at least one side wall with a slightly positive slope, said pillar 30 disposed between and connecting said second 26 and third 29 sets of strips, wherein each of the pillars is substantially free of stringers, and wherein the first and second pillars include first and second P doped silicon regions 40 abutting first and second N doped silicon regions 41, and first and second insulating regions 42. Note figures 5 and 6(a), column 11 lines 3-21, and column 12 lines 6-12 of Johnson et al. Note that the first and second N doped silicon regions of claim 69 read on N type regions 43, while the first and second N doped silicon regions of claim 70 read on N type regions 41.

(10) Response to Argument

It is argued, at page 6 of the brief, that "Specifically, an etch step actually likely to produce stringers, as described in the present application, is detailed in Johnson et al. at col. 14, lines 13 to 27, and the idealized resulting structure is shown in Fig. 6(g)." However, at column 14 lines 13-16, Johnson et al. state, "conductors3 mask ... features are etched downwards into layers stack3, conductors3, and stack2, [stopping] below the steering element of layer stack 2 [i.e. below the bottom of layer stack 2, part 51 in figure 6(g)]" Note also column 12 lines 56-59 of Johnson et al.: "Etching used to pattern the north-to-south lines continues until the first layer stack has also been etched through [emphasis added] the steering element." The method employed by Johnson et al. cuts through pillar forming layer 45 in both directions, leaving nothing but empty space in the area between first pillars 45a1 through 45b2, the only place first level stringers could be found. Note figure 6(e) and column 13 lines 45-48 and 64-68. Next Johnson et al. cut through pillar forming layer 51 in both directions, leaving empty space in the area between second pillars 51a1 through 51b2, the only place second level stringers could be found. Note figure 6(g), column 13 lines 64-68, and column 14 lines 13-16. "The cross-section of [each] pillar will be rectangular with one dimension being equal to the width of the bottom conductors and the other dimension equal to the width of the top conductors." Column 12 lines 66-69. There is simply no unetched material left over for stringers.

It is further argued, at page 6 of the brief, "For example, stringers may be formed connecting pillar 51a1 and pillar 51a2 in Fig. 6(g)." However, this is nothing more, at present, than the opinion of the brief-writer. Applicants had the opportunity to present evidence through citation to written documents or a Rule 132 affidavit. It should be noted that Applicant James

Cleeves was a co-inventor of the Johnson et al. patent and presumably knows whether stringers were, or were not, present. Dr. Cleeves' silence has been taken as a tacit admission on his part that stringers were not present.

It is argued, at page 6 of the brief, that "In the final rejection of February 10, the Examiner [points] out that 'there are no stringers in figure 6(g) or anywhere in the disclosure of Johnson et al.'" The Examiner stands by this statement, it is the one thing he is absolutely sure of. There are no stringers anywhere in the disclosure of Johnson et al.

It is argued, at page 6 of the brief, that *Continental Can* sets the standard when a characteristic is not explicitly described in a reference. This case distinguishes from *Continental Can* on the facts. There is, explicitly, no place for stringers in the Johnson et al. device. Note figure 6(e), column 13 lines 45-48, 64-68, figure 6(g), column 13 lines 64-68, and column 14 lines 13-16 of Johnson et al. This case also likely distinguishes from *Continental Can* on the law. The prior art in this case allegedly fails to disclose a negative limitation. There is nothing to suggest that the *Continental Can* Court intended that holding to be extendable to negative limitations. Between one asserting that something (stringers) exists in the prior art and another asserting that it does not, the common laws of evidence would put the burden on the one asserting existence. Further, on a recent occasion the Federal Circuit has placed the burden on a patent owner to show that a negative limitation was not found in the prior art, in the face of a reasonable suggestion that the element prohibited by the claim need not necessarily be present in every device taught by the prior art. See *Upsher-Smith Laboratories Inc. v. Pamlab LLC*, 75 USPQ2d 1213,1215 (CA FC 6/17/2005).

It is argued, at page 7 of the brief, "A description of an invention in a patent specification cannot be expected to list all possible flaws; this is neither conventional nor required. Also, as is well understood, it is very common for a patent application to be filed before much, if any, experience with fabrication of the claimed device has been acquired, or defects recognized. Johnson et al. likely did not mention the danger of stringer formation in part because Johnson et al. did not anticipate this danger." This seems nothing more than an allegation that Johnson et al. did not know how to make the device they disclosed, but failed to make this fact clear in their application. It should be pointed out that Patent #6,034,882 (the Johnson et al. patent) is owned by the assignee of the present application. Note Appeal Brief, page 3, line 2. If Applicants are wishing to correct a material defect in an earlier patent, filing a new patent application is not appropriate. Johnson et al. is a U.S. patent. Absent any evidence to the contrary Johnson et al. is read as being valid as a whole and is applied accordingly.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

THOMAS L. DICKEY 11/26/05

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